REMARKS

By this amendment, claims 1-16 and 21-28 are pending, in which claims 1-16 and 21-26 are currently amended, claims 17 and 20 are canceled without prejudice or disclaimer, and claims 27 and 28 are newly presented. No new matter is introduced.

The Final Office Action mailed May 11, 2010 objected to claims 14-16, and rejected claim 26 under 35 U.S.C. § 112, second paragraph, as being indefinite, claims 1, 3-12, 17 and 20-26 under 35 U.S.C. § 102(b) as anticipated by *Smith et al.* (Disambiguating Geographic Names in a Historical Digital Library) (Smith) and *Wacholder et al.* (Disambiguating of Proper Names in Text) (Wacholder), claims 1, 3-12, 17 and 20-26 as obvious under 35 U.S.C. § 103 based on Smith in view of Wacholder, claim 13 as unpatentable under 35 U.S.C. § 103(a) based on Smith and Wacholder in view of *Naughton* (US 6,240,425 B1) (Naughton), and claim 2 as unpatentable under 35 U.S.C. § 103(a) over Smith and Wacholder in view of *Frank et al.* (WO 2001/063479 A1) (Frank).

As a preliminary matter, Applicant would like to thank the Examiner for his indication of allowable subject matter in claims 14-16.

Claim 26 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

This rejection is respectfully traversed. Claim 26 has been amended to refer to claim 10. Claim 10 includes adequate antecedent basis in reciting "an associated place" and "a selected toponym-place pair." Accordingly, it is respectfully requested that the rejection to claim 26 under 35 U.S.C. § 112, second paragraph be withdrawn.

Claims 1, 3-12, 17 and 20-26 were rejected under 35 U.S.C. § 103 as obvious based on Smith in view of Wacholder.

This rejection is respectfully traversed.

Claims 17 and 20 have been canceled. Therefore, the rejection to claims 17 and 20 is moot.

There are substantial differences between the claimed method and system on the one hand and those of the applied references on the other hand that undermine the obviousness conclusion under 35 U.S.C. §103(a). Specifically, claim 1 recites, *inter alia:* "wherein determining said value involves a **mathematical summation over the plurality of documents** in which geo-textual correlations were identified that involved that toponym-reading pair." (Emphasis added). Claim 10 recites, *inter alia:* "obtaining a pre-computed number for a value of a confidence that the toponym of the selected toponym-place pair refers to the place of the selected toponym-place pair, said **pre-computed number derived from a statistical observation about a plurality of documents**." (Emphasis added). These features are neither disclosed nor suggested by any of the applied references.

With respect to independent claim 1, Smith does not disclose or suggest "wherein determining said value involves a **mathematical summation over the plurality of documents in which geo-textual correlations were identified that involved that toponym-reading pair.**" (Emphasis added). The Examiner asserted that the aforementioned claim feature was disclosed or suggested by pages 7-8 of Smith, reciting "[t]he F-measure is *mathematical summation over all documents in the corpus* such as Greek, Roman, *in which geotextual correlations were identified that involved that toponym-reading pair.*" Office Action p. 8. However, the F-

measure is not a mathematical summation over all documents. Rather it is a statistical measure to test the accuracy of an information retrieval method and is found according to the formula:

$$F_\beta = \frac{(1 + \beta^2) \cdot (\text{precision} \cdot \text{recall})}{(\beta^2 \cdot \text{precision} + \text{recall})}$$

In the above formula, "precision" and "recall" have specific meanings with regards to the accuracy of the specific information retrieval method under test and β is a constant between 0 and 1 (normally $\beta=1$). One of ordinary skill in the art would recognize that the above formula is not a mathematical summation; in fact it is a ratio. Further, one of ordinary skill in the art would recognize that β, precision, and recall are not "the plurality of documents."

Moreover, Smith, after introducing a method for disambiguation, in Section 4 (called "Evaluation"), to assure the reader of merits of his method the author tries to evaluate the introduced method for its performance accuracy by applying the method to "a text from each of five representative corpora ancient Greece, ancient Rome, the Bolles collection on the history and topography of London, and two Library of Congress collections on the settlement of California and the Upper Midwest." Smith, pages 7-8. For this purpose the author uses the F-measure to give a numerical statistical value of the accuracy or usefulness of the purposed method. For each class of library texts, the author finds the F-measure based on the computed precision and recall. As one of ordinary skill in the art can see, this is in complete contrast with and bears no relation to the mathematical operation summation purposed by the Applicant as in order to give confidence value in the reading of a toponym which might be used in a subsequent ranking stage. In fact what Smith discloses in Section 4 is not part of his or any other disambiguation method, rather it is an evaluation procedure applied to Smith's disambiguation

method.   Thus, Smith does not disclose or even suggest each of the claim features recited in claim 1.

Wacholder does not cure the deficiencies of Smith.   Wacholder is not even asserted as disclosing or suggesting the aforementioned claim feature or any claim feature of claim 1.   In fact, Wacholder does not disclose or even suggest "wherein determining said value involves a **mathematical summation over the plurality of documents** in which geo-textual correlations were identified that involved that toponym-reading pair" (emphasis added).

With respect to independent claim 10, Wacholder does not disclose or suggest "obtaining a pre-computed number for a value of a confidence that the toponym of the selected toponym-place pair refers to the place of the selected toponym-place pair, said **pre-computed number derived from a statistical observation about a plurality of documents**." (Emphasis added). On page 11 of the Office Action, the Examiner asserted that "[a]s discussed above, <"Washington", (?PLACE)> is assigned a low positive score or zero score, the low positive score or zero score is derived from the first occurrence of the term in the collection of documents)."   However, a "low positive score or zero score" which "is derived from the first occurrence of the term in the collection of documents" does not generate a "pre-computed number derived from a statistical observation about a plurality of documents."

In particular, the mere assignment of "the low positive score or zero score" shows that the Examiner's asserted method is not assigning a score which is "derived from a **statistical observation about a plurality of documents**."   To a person with ordinary skill in the art, assigning a confidence value derived from statistical observation about a plurality of documents amounts to a **statistical analysis** of the plurality of and performing some sort of statistical

inference (e.g., averaging) over a plurality of documents in order to obtain a confidence level which **is statistically significant**, e.g., meaning in the case at hand with a high probability the assigned pre-computed confidence value to pair ("Washington", Place) is the confidence value in occurrence of ("Washington", Place) in a random or typical document; alternatively the pre-computed confidence value could be an average of all confidence values for that pair across all documents.   One purpose of such pre-computed confidence value is to provide an educated guess for an initial value for the actual confidence value computed for an actual pair.   The Examiner's suggestion that "the low positive score or zero score is derived from the **first occurrence** of the term in the collection of documents," by no means could amount to a **meaningful statistically significant confidence value** because the "first occurrence" is not a statistically significant "estimator or indicator" of the behavior of the plurality of documents.

Smith does not cure the deficiencies of Wacholder.   Further, Smith is not even asserted as disclosing or suggesting the aforementioned claim feature.   In fact, Smith does not disclose or even suggest "obtaining a pre-computed number for a value of a confidence that the toponym of the selected toponym-place pair refers to the place of the selected toponym-place pair, said pre-computed number derived from a statistical observation about a plurality of documents."

Based on the foregoing, it is apparent that even if the applied references are combined as proposed by the Examiner, and Applicant does not agree that the requisite basis for the asserted motivations been established, the claimed inventions would not result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044 (Fed. Cir.1988).   Applicant, therefore, submits that the imposed rejection of claims 1, 3-12, 17 and 20-26 under 35 U.S.C. §103(a) for obviousness predicated upon Smith in view of Wacholder is not factually or legally viable and, hence, solicit withdrawal thereof.

Claims 1, 3-12, 17 and 20-26 were rejected under 35 U.S.C. § 102(b) as anticipated by Smith or Wacholder.

This rejection is respectfully traversed. Each of the claim features present in independent claim 1 and 10 are not present in Smith and Wacholder. Specifically, claim 1 recites, *inter alia:* "wherein determining said value involves a **mathematical summation over the plurality of documents** in which geo-textual correlations were identified that involved that toponym-reading pair." (Emphasis added). Claim 10 recites, *inter alia:* "obtaining a pre-computed number for a value of a confidence that the toponym of the selected toponym-place pair refers to the place of the selected toponym-place pair, said **pre-computed number derived from a statistical observation about a plurality of documents**." (Emphasis added). These features are neither disclosed nor suggested by any of the applied references. Applicant incorporates, herein, the arguments previously advanced in traversing the imposed rejection of claims 1, 3-12, 17 and 20-26 as being obvious in view of Smith and Wacholder. As previously noted, Smith and Wacholder each do not disclose or even suggest the respective aforementioned claim features of independent claims 1 and 10. Thus, it is respectfully requested that the rejection of claims 1, 3-12, 17 and 20-26 under 35 U.S.C. 102(b) for anticipation predicated upon Smith or Wacholder be withdrawn.

Claim 13 was rejected under 35 U.S.C. § 103(a) as unpatentable based on Smith and Wacholder in view of Naughton.

Claim 13 is dependent from claim 10. Applicant incorporates, herein, the arguments previously advanced in traversing the imposed rejection of claim 10 under 35 U.S.C. § 103(a) for obviousness predicated upon Smith and Wacholder. Naughton does not cure the deficiencies of

Smith and Wacholder. Accordingly, even if the applied references were combined as proposed by the Examiner, and Applicant does not agree that the requisite fact-based motivation has been established, the claimed invention would not result. *See Uniroyal, Inc. v. Rudkin-Wiley Corp.*, *supra*. Thus, it is respectfully requested that the rejection of claim 13 be withdrawn.

Claim 2 was rejected 35 U.S.C. § 103(a) as unpatentable based on Smith and Wacholder in view of Frank.

Claim 2 is dependent from claim 1. Applicant incorporates, herein, the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. § 103(a) for obviousness predicated upon Smith and Wacholder. Frank does not cure the deficiencies of Smith and Wacholder. Accordingly, even if the applied references were combined as proposed by the Examiner, and Applicant does not agree that the requisite fact-based motivation has been established, the claimed invention would not result. *See Uniroyal, Inc. v. Rudkin-Wiley Corp.*, *supra*. Thus, it is respectfully requested that the rejection of claim 13 be withdrawn.

Claims 14-16 were objected to as being dependent upon a rejected base claim.

This objection is respectfully traversed. Claims 14-16 depend from independent claim 10, which is in condition for allowance after the current amendments are entered. As such, it is respectfully requested that the objection to claims 14-16 be withdrawn.

New claims 27 and 28

Claim 27 has been added. Claim 27 is allowable for at least the reason that claim 27 includes the claim feature "determine a value for a confidence that the selected toponym is

associated with the selected reading based, at least in part, on a mathematical summation over the plurality of documents in which geo-textual correlations were identified that involved the toponym-reading pair," which is not disclosed or even suggested by any of the cited references. Claim 28 is dependent upon claim 27 and recites additional distinct claim features.

Therefore, the present application, as amended, overcomes the objections and rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 519-9952 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

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